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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,740	10/27/2003	Tsuneyasu Nohara	023971-0334	8881
22428	7590	07/21/2005	EXAMINER	
FOLEY AND LARDNER SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			MCMAHON, MARGUERITE J	
			ART UNIT	PAPER NUMBER
			3747	

DATE MAILED: 07/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/692,740

Applicant(s)

NOHARA ET AL

Examiner

Marguerite J. McMahon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 5, 8 and 9 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-20 is/are allowed.
- 6) ☒ Claim(s) 1-3, 10 and 11 is/are rejected.
- 7) ☒ Claim(s) 4, 6 and 7 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/27/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

Claims 5, 8, and 9 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 6/10/05.

Claim Objections

Claims 2, 3, and 11 are objected to because of the following informalities:

In lines 5-7 of claim 3 "for satisfying responsivity of the control shaft upon varying the compression ration of the internal combustion engine" is unclear.

In lines 4-5 of claim 3 "operated to switch supply of the hydraulic pressure to the hydraulic actuator" is unclear since it does not say what it is switching from or switching to and "supply" does indicate anything specific.

In line 6 of claim 11 "the" should be --a-- and "control shaft" should be --control link--

Appropriate correction is required.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Moteki (6,604,495). Note a variable compression ratio system for an internal combustion engine, comprising: a variable compression ratio mechanism for continuously varying a compression ratio of the internal combustion engine, the variable compression ratio mechanism including a control shaft 23 rotatably moveable to a

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rotational position corresponding to the compression ratio; a hydraulic actuator 30 driving the control shaft to the rotational position depending on operating conditions of the internal combustion engine; a hydraulic pressure source 43 mechanically driven by the internal combustion engine to produce a hydraulic pressure supplied to the hydraulic actuator; and hydraulic control means 48 for variably controlling the hydraulic pressure supplied to the hydraulic actuator on the basis of the operating conditions of the internal combustion engine, wherein the variable compression ratio mechanism comprises an upper link 22 having one end coupled to a piston via a piston pin, a lower link 18 pivotally coupled to the upper link and pivotally supported on a crankshaft 16 via a crankpin 17, and a control link 25 having one end pivotally coupled to the lower link and an opposite end pivotally supported on an eccentric cam 24 disposed on the control shaft (see Figure 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 3, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Moteki (6,604,495). Note the hydraulic control means 48 comprising an ecu (aka controller, not shown) and a selector valve electronically connected to the ecu, the selector valve being disposed between the hydraulic actuator 30 and the hydraulic pressure source 43, the controller being programmed to variably

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control a hydraulic pressure upstream of the selector valve based on the operating conditions of the internal combustion engine.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moteki (6,604,495) in view of Aoyama et al (6,516,757). Moteki shows everything except employing a supercharger. Aoyama et al teach that it is old in the art to employ a supercharger 51 (which is a turbocharger, a type of supercharger). It would have been obvious to one of ordinary skill in the art to modify Moteki by employing a supercharger, in order to increase engine power, as this is conventional.

Allowable Subject Matter

Claims 4, 6, and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 12-20 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art fails to teach or clearly suggest the claimed invention as a whole including determining a predetermined hydraulic pressure to be supplied to the hydraulic actuator on the basis of the detected operation conditions of the internal combustion engine, detecting a hydraulic pressure within the hydraulic passage, and controlling the hydraulic pressure supplied to the hydraulic actuator to the predetermined hydraulic pressure on the basis of the detected hydraulic pressure within the hydraulic passage, in the context of a method for controlling a variable compression ratio system for an internal combustion engine, the variable compression ratio system including a variable compression ratio

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mechanism for continuously varying a compression ratio of the internal combustion engine, a hydraulic actuator driving the variable compression ratio mechanism, and a hydraulic pressure source mechanically driven by the internal combustion engine to produce a hydraulic pressure, the hydraulic actuator being supplied with the hydraulic pressure from the hydraulic pressure source via a hydraulic passage extending therebetween, the method comprising detecting operation conditions of the internal combustion engine.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marguerite J. McMahon whose telephone number is 703-308-1956. The examiner can normally be reached on flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yuen Henry can be reached on 703-308-1946. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


MARGUERITE MCMAHON
PRIMARY EXAMINER